

WHAT IS CLAIMED IS:

1 1. A shoe construction for a shoe, comprising:
2 a sole having a naturally contoured shape defined by a design
3 which conforms to the natural shape of the unloaded foot wherein
4 the theoretically ideal stability plane is determined by the
5 desired shoe sole thickness and by the natural shape of a foot
6 surface of the individual, said theoretically ideal stability plane
7 being defined at an edge of the shoe by the desired shoe sole
8 thickness in a frontal plane cross section, said shoe sole
9 thickness increasing beyond the theoretically ideal stability plane
10 to increase stability beyond its natural level.

1 2. The shoe sole construction as set forth in claim 1 wherein
2 the thickness of the sole at least at one of the opposed edges of
3 said sole is thicker at the portions of the sole by a thickness
4 which gradually varies continuously from a first thickness through
5 at least an additional thickness.

1 3. The shoe sole construction as set forth in claim 1 wherein
2 the thickness of the sole gradually varies so that at least a
3 portion of said sole has a thickness which is greater than the
4 thickness predicted by the theoretically ideal stability plane.

1 4. The shoe sole construction as set forth in claim 1 wherein
2 the shoe sole is made from a material or materials which deform
3 when the shoe is worn thus naturally closely paralleling the
4 natural deformation of the bare foot under load.

1 5. The shoe sole construction as set forth in claim 1 wherein
2 the shoe sole thickness varies in a frontal plane cross section.

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1 6. The shoe sole construction as set forth in claim 1,
2 wherein said shoe sole thickness increases beyond the theoretically
3 ideal stability plane in order to provide greater than natural
4 stability.

1 7. The shoe sole construction as set forth in claim 1,
2 wherein said shoe sole thickness increases beyond the theoretically
3 ideal stability plane in such a manner that there are
4 proportionately equal increases to the theoretically ideal
5 stability plane from the front of the shoe sole to its back.

1 8. The shoe sole construction as set forth in claim 1 wherein
2 said shoe sole thickness increases beyond the theoretically ideal
3 stability plane in such a manner that the thickness varies from
4 one frontal plane cross section to another.

1 9. The shoe sole construction as set forth in claim 2 wherein
2 variations in the increased thickness of the sole are determined
3 empirically.

1 10. The shoe sole construction as set forth in claim 2
2 wherein said thickness variations are symmetrical as between
3 lateral and medial sides of said shoe.

1 11. The shoe sole construction as set forth in claim 2
2 wherein said thickness variations are asymmetrical as between
3 lateral and medial sides of said shoe.

1 12. The shoe sole construction as set forth in claim 2
2 wherein said thickness variations begin beneath the heel of the
3 wearer.

13. The shoe sole construction as set forth in claim 2 wherein said thickness variations begin at a point beneath the heel of the wearer, so that the theoretical ideal stability plane is determined by the least thickness in the load-bearing portion of the shoe sole.

14. The shoe sole construction as set forth in claim 2 wherein said thickness variations increase then decrease along said outer sole contour in a frontal plane cross section.

15, A shoe sole construction for a shoe, comprising:
a sole having a naturally contoured shape defined by a design which conforms to the natural shape of the unloaded foot wherein the theoretically ideal stability plane is determined by the desired shoe sole thickness which is normally constant in a frontal plane cross section, said sole including a midsole having a density variation to approximate a greater than natural stability, said midsole having material of greater density nearer to the edge of the shoe sole and material of lesser density nearer to the center line of the shoe sole.

16. The shoe as set forth in claim 15 wherein material of least density is located beneath the heel of a wearer and material of greater density is located adjacent said material of least density.

17. The shoe as set forth in claim 15 wherein said sole has a portion which extends beyond the theoretically ideal stability plane.

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1 18. The shoe as set forth in claim 15 wherein said density
2 variation is provided by variations in the bottom sole tread.

1 19. A shoe construction comprising,
2 a shoe sole having opposed stability quadrant portions
3 at opposed edges of said sole, said quadrants portions having an
4 outer edge which is defined by a radius quarter than a radius
5 defining a theoretically ideal stability plane.

1 20. A shoe construction for a shoe, comprising:
2 a sole having a naturally contoured shape defined by a design
3 which conforms to the natural shape of the unloaded foot wherein
4 the theoretically ideal stability plane is determined by the
5 desired shoe sole thickness and by the natural shape of a foot
6 surface of the individual, said theoretically ideal stability plane
7 being defined at an edge of the shoe by the desired shoe sole
8 thickness in a frontal plane cross section, said shoe sole
9 thickness decreasing from the theoretically ideal stability plane
10 to increase foot motion beyond its natural level.